

REMARKS

In the Office Action, Claims 1-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,840,029 to Mazess in view of Fatemi, M., et al., Coherent Ultrasound stimulated Acoustic Emission Imaging, IEEE Ultrasonics Symposium 1997, pp. 1411-1414 (herein "Fatemi").

Claims 1, 21 and 29, which are the pending independent claims, were rejected in view of a combination of Mazess and Fatemi et al.

The Office Action indicates that "Mazess fails to teach confocal transducers" and cites Fatemi et al. as allegedly curing this defect. Applicants respectfully disagree, at least in view of the failure of Fatemi to teach use of "confocal transducers *to receive* and transmit the ultrasound to result in a highly localized/focused oscillating force," as alleged at page 2 of the Office Action. To the contrary, Fatemi fails to disclose or suggest two confocal transducers that transmit *and receive* ultrasound to result in a highly localized or focused oscillating force, as in the present invention.

Fatemi, which is directed to tissue rather than bone (See, Col. 2 at page 1411 of Fatemi), transmits "a pair of confocal ultrasound beams" from a "two-element confocal transducer." (Col. 1 at page 1411 of Fatemi.) The transmitter of Fatemi operates to sonicate "the object ... by the a [sic] pair of confocal ultrasound beams." (Id.) In Fatemi, the pair of ultrasound beams are focused on the same point and have frequencies ω_1 and ω_2 . Fatemi utilizes a hydrophone to pick up an acoustic signal having a frequency of a difference $\Delta\omega$ of frequencies ω_1 and ω_2 . The hydrophone of Fatemi that receives the frequency difference $\Delta\omega$ is not focused, and the acoustic signal is in the audible range.

Accordingly, Fatemi fails to disclose a confocal receiver, as in the present invention. Moreover, Fig. 1 (reproduced below) and the other disclosure of Fatemi teaches away from replacing the non-focused audio hydrophone receiver with a confocal receiver.

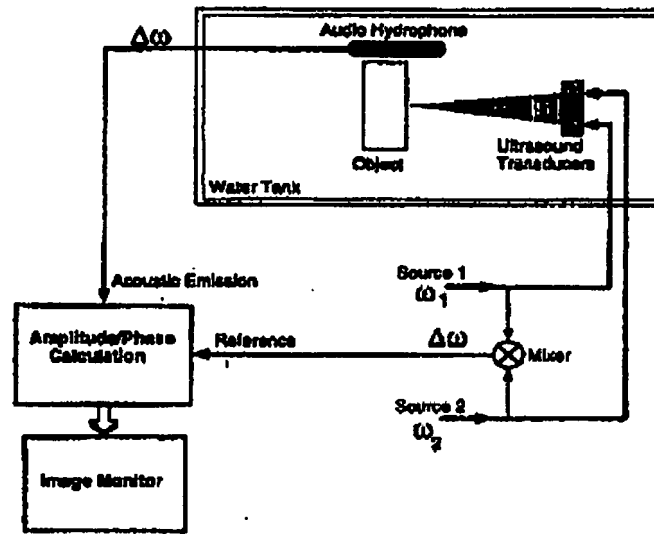


Figure 1 Coherent ultrasound stimulated acoustic emission imaging system.

As shown in Fig. 1, the audio hydrophone in the Fatemi device obtains the acoustic signal having a frequency of a difference of the two transmitted ultrasound frequencies. Fatemi teaches placing the audio hydrophone at a 90 degree displacement from the direction in which the pair of ultrasound beams are focused.

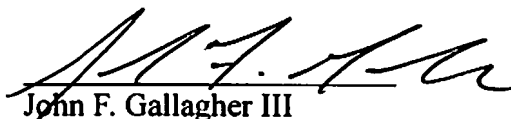
For at least the above reasons, Fatemi does not cure the failure of Mazess to disclose or suggest that both transducers are confocal transducers, as in the present invention. Accordingly, the rejection of independent Claims 1, 21 and 39 must be withdrawn. Without conceding the patentability *per se* of Claims 2-20 and 22-28, these claims are also allowable at least in view of their dependence upon Claims 1 and 21, respectively.

It is noted that Kantorovuch is referenced at page 3 of the Office Action in regard to Claim 6. However, based on the stated basis for the rejection that is provided at page 1 of the Office Action, it is believed that Claim 6, like Claims 1-5 and 7-29, was rejected in view of a combination of Fatemi and Mazess. U.S. Patent No. 6,221,019 to Kantorovuch was cited in the prior Office Action and was addressed in the response thereto. As stated in that prior response, the contents of which are incorporated herein by reference, Kantorovuch does not cure the defects of Fatemi and Mazess.

For the above reasons, the pending claims are believed to be in condition for allowance

and issuance of a notice of allowance is respectfully requested. If the Examiner has any questions regarding this communication, the Examiner is requested to contact the undersigned at the below number.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "J.F. Gallagher III", written over a horizontal line.

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